

UDC 615.846.015.4

USSR

GRIGOR'YEVA, V. D., Department of Physical Therapy Methods, Central Scientific Research Institute of Health Resorts and Physical Therapy, Moscow

"Therapeutic Effect of Decimeter Waves"

Moscow, Sovetskaya Meditsina, No 2, 1973, pp 75-79

Abstract: Exposure of 100 patients aged 20 to 65 suffering from rheumatoid arthritis from 1 to 15 years to decimeter waves (460 mhz, wavelength 65 cm, focused on the adrenals, solar plexus, and affected joints, 10 to 18 sessions of up to 25 minutes each) produced marked improvement (diminution of pain, freer movements, etc.) in 75%, slight improvement in 18%, and was ineffectual in 7%. The procedure was readily tolerated by the patients and none experienced side effects. The therapeutic activity of decimeter waves in the treatment of rheumatoid arthritis is ascribed to their stimulating effect on the neurohumoral regulatory systems (pituitary-adrenal and sympathetic-adrenal), immunocompetent organs (confirmed in experiments on rabbits in which decimeter waves reduced the content of DNA in the spleen and that of RNA and DNA in the mesenteric lymph nodes), and microcirculation.

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1/2 017 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--CLINICAL PICTURE OF RETROLENTAL FIBROPLASIA IN CHILDREN WITH THE
EYE PATHOLOGY -U-
AUTHOR-(02)-GRIGORYEVA, V.I., CHUTKO, S.M.
COUNTRY OF INFO--USSR
SOURCE--VESTNIK OFTAL'MOLOGII, 1970, NR 3, PP 13-16
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--EYE DISEASE, PEDIATRICS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/0125 STEP NO--UR/0357/70/000/003/0013/0016
CIRC ACCESSION NO--AP0129381
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0129381

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE CARRIES A DESCRIPTION OF 15 PATIENTS WITH RETROLENTAL FIBROPLASIS EXAMINED AT AN EYE CLINIC FOR CHILDREN. THE NECESSITY OF AN EARLIER DETECTION AND PREVENTION OF THIS DISEASE IS STRESSED.

FACILITY: KAFEDRA GLAZNYKH BOLEZNEY, LENINGRADSKOGO PEDIATRICHESKOGO MEDITSINSKOGO INSTITUTA.

UNCLASSIFIED

Acc. Nr: AP0034411

Ref. Code: UR 0297

PRIMARY SOURCE: Antibiotiki, 1970, Vol 15, Nr 2, pp 129-132

RESIDUAL ACTIVITY OF PENICILLINS IN NATIVE SERUM AND ALBUMIN SOLUTIONS

Grigor'yeva, V. M.; Manuil'skaya, T. M.

Antibiotic Department of L. A. Tarasevich State Control Institute
for Medical Biological Preparations, Moscow

It was found that activity levels of penicillins, such as benzylpenicillin, phenoxymethylpenicillin, ampicillin and oxacillin in 4 and 8 per cent solutions of human and bovine blood serum albumin were higher than those in native serum. This allows to state that serum (unlike albumin) possesses additional factors which increase antibiotics fixation by serum albumin.

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REEL/FRAME

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1/2 038 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--LONG WAVE COSMIC RADIO EMISSION IN CIRBUMLUNAR SPACE -U-
AUTHOR-(02)-GRIGORYEVA, V.P., SLYSH, V.I.
COUNTRY OF INFO--USSR
SOURCE--KOSMICHESKIE ISSLEDOVANIYA, VOL. I, MAR-APR. 1970, P. 284-289
DATE PUBLISHED-----70
SUBJECT AREAS--ATMOSPHERIC SCIENCES, SPACE TECHNOLOGY
TOPIC TAGS--COSMIC RADIATION, RADIO EMISSION, LOW FREQUENCY,
MAGNETOSPHERE, INTERPLANETARY SPACE, LUNAR ENVIRONMENT/(U)LUNA 11 LUNAR
PROBE, (U)LUNA 12 LUNAR PROBE.
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1994/1750 STEP NO--UR/0293/70/003/000/0284/0289
CIRC ACCESSION NO--AP0115579
UNCLASSIFIED

PROCESSING DATE--16OCT70

UNCLASSIFIED

2/2 038

CIRC ACCESSION NO--AP0115579

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESULTS OF MEASUREMENTS OF THE LOW FREQUENCY BACKGROUND COSMIC RADIO EMISSION AT 965 AND 200 K HZ CARRIED OUT ON THE ARTIFICIAL MOON SATELLITES LUNA 11 AND LUNA 12. IN THE CASE OF RECEPTION BY A SHORT DIPOLE ANTENNA THE RADIO EMISSION AT 200 KHZ IS ENTIRELY ATTRIBUTABLE TO SHOT NOISE OF THE INTERPLANETARY PLASMA, WHILE THE EMISSION AT 965 KHZ IS ONLY PARTLY ATTRIBUTABLE TO THIS FACTOR. THE RADIO EMISSION LEVEL IN THE MOON'S SHADOW IS CONSIDERABLY LOWER THAN THE RADIO EMISSION LEVEL IN THE ILLUMINATED REGION. A DECREASE IN THE BACKGROUND RADIO EMISSION INTENSITY AT LOW FREQUENCIES IS CONFIRMED. NO RADIO EMISSION FROM JUPITER AND OTHER SOURCES (EXCEPT THE SUN) WITH A FLUX GREATER THAN 10 TO THE MINUS 19TH W-SQ M-HZ IS NOTED. A SHARP INCREASE IN THE RADIO EMISSION IN THE TAIL OF THE EARTH'S MAGNETOSPHERE IS OBSERVED.

UNCLASSIFIED

GRIGOR'YEVA, Y.S.

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C. 73

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XI-14. METHODS OF OBTAINING AND SOME ELECTRICAL PROPERTIES OF ZnCaP₂ SEMICONDUCTOR

Article by V. S. Grigor'yeva, V. D. Prochukhan, A. A. Yakovlev, Leningrad; Novosibirsk, Ill. Sibirskiy Nauchno Issledovatskiy Tsentr, Volgodobrychnykh Kristalloy i Plazma Kvantov, 12-17 June 1977, p 1071

A study was made of the effect of the growth conditions by the Bridgman and gas transport reaction method on the quality and habit of crystals of the semiconductor compound ZnCaP₂.

A procedure was developed for the manufacture of ohmic contacts with ZnCaP₂. Some electrophysical properties of single crystals were defined. The orientation of the single crystals obtained by the Bridgman method was carried out for the optical studies.

A study was made of the effect of thermal annealing in Zn and P vapor and also the introduction of admixtures of the I, III and VV Group elements on the electrical properties of ZnCaP₂. It was demonstrated that depending on the chemical nature of the volatile component, the annealing conditions on introduction of alloying elements, the specific resistance and concentration of the charge carriers can be varied within broad limits.

USSR

UDC: 669.721.472(088.8)

MARKOV, G. S., GRIGOR'YEVA, Ye. A., KOSAREV, S. P., MUZHZHAVLEV, K. D.,
ZUYEV, N. M., IVANOV, A. B.

"A Magnesium Electrolyzer"

USSR Author's Certificate Number 350863, Filed 28/12/70, Published 28/09/72
(Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1973, Abstract No
8G204P).

Translation: The electrolyzer is equipped with chlorine-removing anodes and diaphragms. In order to reduce the losses of Mg and Cl₂ and improve their separation, a diaphragm is placed horizontally between the anodes of the electrolytic cells, separating the zone of collection of Mg from the zone of collection of Cl₂.

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USSR

UDC: 548.5

FESENKO, Ye. G., GAVRILYACHENKO, V. G., SPINKO, R. I., MARTYNIUK, M. A., GRIGOR'YEVA, Ye. A., FERONOV, A. D., Rostov State University

"Growth of Lead Titanate Crystals and Investigation of Their Domain Structure"

Moscow, Kristallografiya, Vol 17, No 1, Jan/Feb 72, pp 153-157

Abstract: A method is described for growing laminar $PbTiO_3$ crystals in the $PbO-TiO_2-BaO$ system, and the results of a study of the domain structure by the optical method and the method of etching are presented. In numerous experiments on crystal growing in this system, it was found that lead titanate grows in crystallites in the form of transparent plane-parallel layers with a perfect (100) face. Experiments showed that the yield of perfect laminar crystals depends on the temperature gradient with respect to height in the melt, and the cooling rate. The optimum conditions are less than

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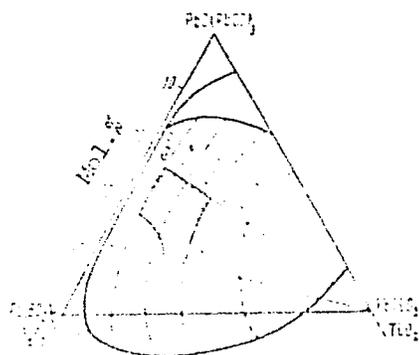
USSR

FESENKO, Ye. G. et al., Kristallografiya, Jan/Feb 72, pp
153-157

20 deg/hr for the cooling rate, and less than 20 deg/cm for the vertical temperature gradient with an approximate ratio of 1:1 between these parameters. The region of laminar crystal growth is shown by the shaded portion on the phase diagram. It was found that observation of optimum conditions gives fairly large crystals (up to 1.5 cm²) with thicknesses from 10-15 μ to 1-1.5 mm. The domain structures of the crystals are classified. Etching figures are shown which correspond to 180° domain configurations, as well as to large monodomain regions with stable antiparallel domains in the surface layer. Some of the particulars of the phase transition are discussed. Four figures, bibliography of eighteen titles.

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FESSENKO, Ye. G. et al., Kristallografiya, Jan/Feb 72, pp 153-157



Phase diagram of the $PbO-H_2O_2-TiO_2$ system
and the region of lamellar crystal growth
(shaded area)

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1/2 CC9 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--PHYSICO-CHEMICAL STUDY OF AMMONIUM CARBONATE AMMONIUM HALIDE WATER
SYSTEMS -L-
AUTHOR--(03)-BELYAYEV, I.N., GRIGORYEVA, YE.A., SPUSKANYUK, ZH.F.
COUNTRY OF INFO--USSR
SOURCE--ZH. NEORG. KHIM. 1970, 15(3), 796-800
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--AMMONIUM HALIDE, AMMONIUM COMPOUND, CARBONATE, AMMONIUM
CHLORIDE, WATER, SOLUBILITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3001/0451 STEP NO--UR/0078/70/015/003/0796/0800
CIRC ACCESSION NO--AP0126203

UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0126203

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SOLY., ELEC. COND., D., VISCOSITY,
AND N OF (NH SUB4) SUB2 CO SUB3-NH SUB4 X-H SUB2 9 SYSTEM (WHERE X
EQUALS CL, BR, OR I) WERE DETD. AT 15DEGREES. THE NH SUB4 CL AND NH
SUB4 BR SYSTEMS ARE SIMPLE EUTONIC SYSTEMS AND THE NH SUB4 I SYSTEM
FORMS THE UNSTABLE (MH SUB4) SUB2 CO SUB3.NH SUB4 I.2M SUB2 O COMPO.

UNCLASSIFIED

1/2 006 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--DETERMINATION OF BENZENEPOLYCARBOXYLIC ACIDS BY A GAS
CHROMATOGRAPHIC METHOD -U-
AUTHOR-(02)-KUKHARENKO, T.A., GRIGORYEVA, YE.A.

COUNTRY OF INFO--USSR

SOURCE--NEFTEKHIMIYA 1970, 10(2), 303-8

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--BENZENE, CARBOXYLIC ACID, GAS CHROMATOGRAPHY, ISOMER, SILICONE
RUBBER, CHEMICAL LABORATORY APPARATUS/(U)E301 SILICONE RUBBER, (U)KHVI
CHROMATOGRAPH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3006/0971

STEP NO--UR/0204/70/010/002/0303/0308

CIRC ACCESSION NO--AP0134689

UNCLASSIFIED

2/2 006

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0134689

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ISOMERS OF THE ACIDS WERE QUAL. AND QUANT. DETD. AS ME ESTERS BY USING 2 TYPES OF PHASES, AND AS BETA CYANOETHYL ESTER OF A POLYATOMIC ALC. AND SILICONE ELASTOMER E 301 AND A HIGH TEMP. CHROMATOGRAPH KHV 1 WITHOUT A PROGRAMMER. THE ANAL. WAS CARRIED OUT AT 3 TEMPS. THE MIXT. OF ESTERS OF THE AICD ISOMERS WERE SEPD. WITH THE SAME COLUMN AND A POLAR PHASE, BUT THE TEMP. AND AMT. OF OF CARRIER GAS (HE) WERE INCREASED TO DECREASE THE RETENTION TIME OF THE SUBSTANCE. THE RELATIVE ANAL. ERROR WAS 2.0PERCENT. THE METHOD WAS USED TO STUDY THE STRUCTURE OF NATURAL SUBSTANCES BY OXIDN. AND THE PRODUCTION OF THE TITLE ACIDS. FACILITY: INST. GORYUCH. ISKOP., MOSCOW, USSR.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--DETERMINATION OF THE PYROMELLITIC ACID CONTENT IN COAL OXIDATION
PRODUCTS -U-
AUTHOR-(02)-KUKHARENKO, T.A., GRIGORYEVA, YE.A.
COUNTRY OF INFO--USSR
SOURCE--KHIM. TVERD. TOPL. 1970, (2), 149-51
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, MATERIALS
TOPIC TAGS--PYROMELLITIC ACID, COAL, OXIDATION, CHROMATOGRAPHY, CARBOXYLIC
ACID ESTER, SILICONE RUBBER, CHROMATOGRAPHIC SEPARATION/101E301 SILICONE
RUBBER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0570 STEP NO--UR/0467/70/000/002/0149/0151
CIRC ACCESSION NO--AP0119488
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119488

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A CHROMATOGRAPHIC METHOD WAS WORKED OUT FOR SEPN. OF ME ESTERS OF BENZENETETRACARBOXYLIC ACIDS USING A 3 M, 4 MM COLUMN PACKED WITH 5PERCENT SILICONE ELASTOMER (E-301) ON CHROMOSORB W, COLUMN TEMP. 240DEGREES, AND CARRIER GAS HE. RELATIVE RETENTION TIMES AND SENSITIVITY COEFFS. OF THE STUDIED ACIDS ARE GIVEN. FACILITY: INST. GORYUCH, ISKOP., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 621.791.4:539.378.3.01:669.295

VORONTSOV, YE. S., Doctor of Technical Sciences, PESHKOV, V. V., Candidate of Technical Sciences, and GRIGOR'YEVSKIY, V. I., Engineer, Voronezh Polytechnic Institute

"The Kinetics of Cleaning the Surface of Titanium of Oxide Films Under Conditions of a Vacuum"

Moscow, Svarochnoye Proizvodstvo, No 6, Jun 73, pp 5-7

Abstract: The authors develop a methodology for studying the kinetics of the dissolution of oxide films on titanium. The methodology is based on using interference tinting as a process indicator. Specimens of VT1 grade technically pure titanium and the OTh titanium alloy (25X25X0.3) were ground to V6 class surface finish and washed in ethyl alcohol. Then they were oxidized in air at 600°C for 15 minutes until the appearance of an etalon, light-blue film, 5h2A thick. The role of closed cavities and autoevacuation is demonstrated in the mechanism of cleaning contacting titanium surfaces. A dependence is obtained of the dissolution time of an etalon light-blue tint, oxide film on temperature in the 525-625°C interval at an air pressure up to $2 \cdot 10^{-2}$ mm Hg.

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1/2 026 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--REACTION OF TRINITROMETHANE WITH KETENES -U-

AUTHOR--(02)-YEREMENKO, L.T., GRIGUS, V.I.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 674-5

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--NITROMETHANE, KETONE, IR SPECTRUM, NMR SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1787

STEP NO--UR/0062770/0007003/0674/0615

CIPC ACCESSION NO--AP0123584

UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0123584

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PASSING CH SUB2:CO 2 HR INTO 29.6 G (O SUB2 N) SUB3 CH IN ET SUB2 O AT 0-5DEGREES GAVE AFTER AN AQ. TREATMENT 34PERCENT RED (O SUB2 N) SUB3 CCME SUB2 OAC, B SUBO.5 38.8DEGREES, N PRIME20 SUBD 1.4512, D PRIME20 1,3680, ALSO PREPD. IN 23PERCENT YIELD IN ME SUB2 CO UNDER SIMILAR CONDITIONS. TREATING 10 G CH SUB2:CMEOAC WITH 15 G (O SUB2 N) SUB3 CH IN ET SUB2 O WITH A TRACE OF BF SUB3 TIMES ET SUB2 O AND REFLUXING 3 HR GAVE 7.2 SAME PRODUCT, WHOSE IR AND NMR SPECTRAL CURVES WERE SHOWN. FACILITY: INST. KHIM. FIZ., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.382:621.317.799

GRIGULIS, YU. K.

"Electromagnetic Impedance Method Of Investigation Of Laminated Semiconductors And Metal Structures"

V sb. Polyprovodniki i ikh primeneniye v elektrotekhn. (Semiconductors And Their Application In Electrical Engineering--Collection Of Works), No 4, Riga, "Zinatne," 1970, pp 73-108 (from RZh--Elektronika i yeye primeneniye, No 11, November 1970, Abstract No 11B434)

Translation: The problem is considered in a general form of noncontact interaction of an electromagnetic field with structures composed of two or more metal, semiconductor, or dielectric layers. Expressions are obtained for the impedance of such structures in the electromagnetic field, during which with growth of the resistivity of the layer being investigated the field frequency increases (from some tens of kHz for metal layers to a λ on the order of several micrometers for the dielectric layers). Experimental measurements are presented of the components of the structure impedance at various frequencies. Problems are discussed of the determination of the parameters of multilayer structures based on the results of the measurements of their impedance. 15 ref. V.K.

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USSR

UDC 576.809.53

VOYTOVICH, YA. V., GRIKHUTNIKOVA, G. P., MIKHAYLOV, V. I., and PONOMAREV, P. I., Institute of Physics, Siberian Branch, Academy of Sciences USSR

"Autotrophic Culturing of Hydrogen-Oxidizing Bacteria in Continuous Culture"

Moscow, Prikladnaya Biokhimiya i Mikrobiologiya, Vol 7, No 2, Mar/Apr 71, pp 183-188

Abstract: Autotrophic assimilation of CO_2 with simultaneous regeneration of O_2 , H_2O , and some food has been discussed in the literature. Use for this purpose of H_2 bacteria capable of utilizing CO_2 as a source of C while deriving energy from the oxidation of H_2 is preferable to that of photo-autotrophs, because less energy is expended per unit amount of synthesized biomass. Hydrogenomonas eutropha Z-1 were culture continuously in a laboratory vessel with a capacity of 5-7 l. and was filled up to 2 l. A solution containing (in g/l.) Na_2HPO_4 1, KH_2PO_4 3, MgSO_4 0.1, CaCl_2 0.02, Fe citrate 0.25 was used, to which 10% urea and the trace elements B, Co, Cu, Mn, Zn, Mo, and Ni in the form of a Hoagland solution has been added. A mixture of CO_2 , O_2 , and H_2 was 1/2

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USSR

VOYTOVICH, YA. V., et al., Prikladnaya Biokhimiya i Mikrobiologiya, Vol 7, No 2, Mar/Feb 71, pp 183-188

continuously pumped in. Automatic control based on continuous measurement of optical density was applied. When the optical density reached a certain level, a part of the culture was withdrawn and fresh nutrient medium added. The composition of the gas discharged from the apparatus was determined. The intensity of the process was determined on the basis of the hourly rate of growth and the amount of dry biomass produced per day per liter. On the basis of the data obtained, it was calculated that for an installation with a mass transfer of H_2 up to 25 ml/min per 1 g effective bio mass, the maximum efficiency (maximum production of biomass per day per liter) will result when the gas mixture contains 2-3% CO , 15-30% O_2 , 30-65% H_2 , depending on the biomass concentration. The maximum rate of growth obtained was 0.2/hr. With increasing biomass concentrations, the rate of growth decreased, while the efficiency of the process increased linearly. Although culturing was conducted under non-sterile conditions, contamination of the culture with extraneous species did not exceed 1% under optimum intensive growth conditions. The apparatus was run for 105 days with continuous periods of operation amounting to 11 days.

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USSR

UDC 612.08:519.24

KHODOROV, B. I., GRILIKHES, R. I., and TEMIN, Ye. N., Institute of Surgery imeni A. V. Vishnevskiy, Academy Medical Sciences, SSSR, Moscow

"Ion Mechanisms of Autorhythmic Activity Studies on Mathematical Models of Excitable Membranes"

Moscow, Byulleten' Eksperimentalnoy Biologii i Meditsiny, No 4, 1970, pp 24-29

Abstract: Studies of mathematical models of membranes of the giant axon and nodes of Ranvier were conducted on frogs. Autorhythmic activity occurs only when the ratios of parameters of ion permeability are as follows 1) the incoming ion current at rest starts to exceed the outgoing current by a value sufficient for the development of regenerative depolarization of the membrane, and 2) during the development of spike the outgoing current (potassium and leakage) increases to values sufficient for complete repolarization (or hyperpolarization) of the membrane. In the giant axon the first condition may be fulfilled both by increasing sodium conductivity (g_{Na}) and decreasing potassium conductivity (g_K) at the resting potential. In the nodes of Ranvier an increase of sodium permeability (P_{Na}) is obligatory. The impulse repetition rate depends on the degree of initial changes of ion permeabilities (conductivity) of the membrane and, to a greater measure, on the time constant of potassium permeability, t_n . The latter is due to the fact that the steepness of increase of interspike depolarization ("pacemaker potential") is largely dependent

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USSR

KHODOROV, B. I., et al., Byulleten' Eksperimental'noy Biologii i Meditsiny, No 4, 1970, pp 24-29

upon the rate of decrease of g_K (or P_K) after the end of action potential. In the instance of an excessive rise of g_{Na} or a very marked decline of g_K the rhythmic discharge acquires a damping character, since in both cases the process of repolarization of the membrane, necessary to eliminate inactivation, proves to be inadequate.

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USSR

UDC: 543.42

GRIKIT, I. A., POLONIK, V. V., GARASHCHENKO, V. P.

"The Rate of Electrical Erosion of Metals in Spectral Light Sources as a Function of the Physical Properties of the Metals"

Minsk, Zhurnal Prikladnoy Spektroskopii, Vol 17, No 4, Oct 72, pp 585-591

Abstract: Electrical erosion of pure metals was studied in standard spectral light sources. The IG-3 and GEU-1 spark oscillators were used. The opposing electrodes were made of spectral carbon. The test specimens had a volume of about 1 cc. Each specimen was subjected to spark erosion with 8-12 spots, and weight loss was determined by weighing on an analytical balance before and after treatment. Each experiment was repeated three times, giving a mean square error of 20% in determination of erosion rate. The rate of erosion was analyzed as a function of the thermophysical and mechanical properties of the metals, the structure of the outer electron shells of the isolated atoms, and the packing density of the atoms in the crystal lattice. An attempt is made to relate the rate of electrical erosion to the strength of the interatomic bond in the crystal lattice of the metals in terms of the principal physical and chemical characteristics of the metals

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GRIKIT, I. A. et al., Zhurnal Prikladnoy Spektroskopii, Vol 17, No 4, Oct
72, pp 585-591

and the configurational model of the condensed state of matter. The pattern governing electrical erosion of metals is found to conform to the periodic law of the elements. This research confirms the specific capacity of electric discharges to selectively destroy metals and alloys, depending on the strength of their interatomic and chemical bonds.

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USSR

UDC 669.295.015.3:543.42

GRIKIT, I. A., and RUMYANTSEVA, T. I.

"Spectral Determination of Oxygen in Powder and Sponge Titanium and Titanium Alloys With Preliminary Extraction"

Moscow, Metallurgiya i Khimiya Titana (Institut Titana), Metallurgiya Publishing House, Vol 6, 1970, pp 146-149

Translation: A description is given of a methodology for spectral determination of the oxygen in powder and sponge titanium and in secondary titanium with extraction of it by carbon and agitating in an argon medium with a direct current arc using a nicked bath. A theoretical evaluation and experimental check of the possibility of restoring titanium oxides and alloying elements with carbon in the direct current arc showed that the oxygen is extracted from the fused, alloyed specimen of secondary titanium at a slowed rate in comparison with specimens of non-alloyed titanium. A recording of the analytic lines of oxygen 7,771.9 Å and argon 7,030.2 Å on an ISP-51 spectrograph with a chamber with a focusing distance of 270 mm on Infra-760 photoplates. The coefficient of variation for oxygen concentrations in the interval 0.1-0.5% is 10-15%. Three illustrations, one table, and two bibliographic entries.

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USSR

UDC 669.295.015.3:543.42

GRIKIT, I. A., GALUSHKO, Ye. G., POLONIK, V. V., OGNEV, P. K., KOLOMOYETS,
~~G. G.~~, and PEREVYAZKO, A. I.

"Spectral Determination of Oxygen in Hydrided Titanium Powders"

Moscow, Metallurgiya i Khimiya Titana (Institut Titana, Metallurgiya
Publishing House, Vol 6, 1970, pp 155-159

Translation: A description is given of the method, based on the principle of full dehydrogenation of briquetted suspended matter, which is analyzed, in an anode state of the direct current arc and exciting the hydrogen from the mixture of gases in an argon environment by the same discharge. Recording of the analytic lines H 6,562.85 Å/Ar 6,965.43 Å was done on an ISP-51 spectrograph with a chamber with a focusing distance of 270 mm on Infra-760 photoplates. Graduated charts for determining hydrogen were constructed on coordinates (ΔS ; lg G). The reproducibility of results from spectral determination of hydrogen in hydrogenated titanium powders is characterized by a variation coefficient of 5-6% with a hydrogen concentration interval between 1.5 and 4%. Three illustrations, two tables, and one bibliographic entry.

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USSR

UDC 669.295.015.3:543.42

GRIKIT, I. A., RUMYANTSEVA, T. I., and RYS'YEVA, Yu. I.

"On the Dependency of the Erosion of Titanium-Nickel Alloys and the Intensity of the Arc and Spark Spectrums on the Nature of Interatomic Links"

Moscow, Metallurgiya i Khimiya Titana (Institut Titana), Metallurgiya Publishing House, Vol 6, 1970, pp 149-154

Translation: A study is made of erosion and spectrum intensity in binary alloys with certain structural states (hard solutions, eutectics, and intermetallides). Manufactured alloys were studied in the arc and spark modes with coal and copper antielectrodes. A certain dependency was established between the intensity of the spectrum and the phase diagram, solid substance-liquid. In the arc discharge, the erosion mechanism has a warming nature. In the high-voltage spark discharge, erosion also occurs due to mechanical destruction of structural components. It is demonstrated that erosion is determined by the stability of structural components, which are characterized by heat features which depend on interatomic links in the crystalline lattice. Three illustrations, one table, and 30 bibliographic entries.

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UDC 669.295.015.3:543.42

USSR

GRIKIT, I. A., GALUSHKO, Ye. G., MAKARENKO, V. S., and PETRUN'KO, M. N.

"Spectrographic Determination of Controlled and Uncontrolled Impurities in Metallic Titanium"

Moscow, Metallurgiya i Khimiya Titana (Institut Titana), Metallurgiya Publishing House, Vol 6, 1970, pp 160-165

Translation: A description is given of an analysis of a sample of metallic titanium in the forged state using the ISP-30 or ISP-28 spectrographs. The spectrum is excited by an alternating current arc of ten amperes (DG-2). The time of preliminary sintering is five seconds to establish the iron, silicon, vanadium, chromium, tin, manganese, copper, nickel, aluminum, and zirconium, and 80 seconds to determine the molybdenum and tungsten. The analytic interval is 1.5 mm. Graduated charts were constructed on the coordinates (ΔS , lg C) according to the three-stage method. The method ensures testing within a range of the concentrations that follow: 0.01-0.2% Fe; 0.002-0.1% Si; 0.002-0.2% V; 0.04-0.2% Cr; 0.003-0.15% Sn; 0.005-0.15% Mn; 0.0009-0.25% Cu; 0.01-0.23% Ni; 0.004-0.2% Al; 0.002-0.17% Zr; 0.006-0.18% Mo; and 0.02-0.1% W. The reproducibility of results from analysis according to this method is characterized by a variation

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GRIKIT, I. A., et al., Metallurgiya i Khimiya Titana (Institut Titana), Metallurgiya Publishing House, Vol 6, 1970, pp 160-165

coefficient of 10-20% depending on the element being tested and its concentration. It was established that the mass of the specimen has a considerable influence on the results of spectral analysis. For the purpose of eliminating the possibility of distorting the results of spectral analysis, it is essential that the specimens of metallic titanium being analyzed correspond in mass and structure to the standard test pieces. Four illustrations, two tables, and five bibliographic entries.

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1/2 036 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--SPECTROGRAPHIC DETERMINATION OF OXYGEN IN SECONDARY TITANIUM AND
TITANIUM ALLOYS WITH PRELIMINARY EXTRACTION -U-
AUTHOR-(02)-GRIKIT, I.A., RUMYANTSEVA, T.I. 6
COUNTRY OF INFO--USSR
SOURCE--ZH. PRIKL. SPEKTROSK. 1970, 12(4), 602-5
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--METAL DEOXIDATION, TITANIUM, TITANIUM ALLOY, LIQUID METAL
PROPERTY, CARBON, ELECTRIC ARC, SPECTROGRAPHIC ANALYSIS, OXYGEN
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/1224 STEP NO--UR/0368/70/012/004/0602/0605
CIRC ACCESSION NO--AP0136635
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--04DEC70

2/2 036

CIRC ACCESSION NO--AP0136635

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TOTAL EXTN. OF O BY C FROM TI SAMPLES INTO A NI MELT IN AN AR ATM. BY USKNG A D.C. ARC WAS DESCRIBED. O WAS COMPLETELY EXTD. FROM TI SPONGE AND FROM NON ALLOYED TI POWDER IN 90 SEC., WHICH WAS THE SAME AS FROM METALLIC TI. THUS, O CONTENT IN THESE CASES COULD BE DETD. UNDER THE SAME CONDITIONS. IN SECONDARY TI ALLOYED BY AL, SI, MN, MO, ETC., IN TI PLUS AL PLUS ZR, AND IN TI PLUS AL PLUS C ALLOYS, THE TOTAL EXTN. WAS REACHED AFTER 120 SEC. ALLOYED TI MUST BE EXTD. GREATER THAN OR EQUAL TO 120 SEC. AND TEMP. OF THE LIQ. METAL BOTH MUST BE GREATER THAN 2000DEGREESK. THE RELATIVE STD. DEVIATION WAS 10-15PERCENT FOR O CONCNS. OF 0.1-0.5PERCENT.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--20NOV70
 TITLE--PREPARATION FOR TREATING DISEASES OF ORAL CAVITY MUCOSA -U-
 AUTHOR-(03)-NAKHIMOVSKAYA, Z.I., SMILTENA, A.K., GRIKITIS, E.YA.
 COUNTRY OF INFO--USSR
 SOURCE--U.S.S.R. 267,014
 REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
 DATE PUBLISHED--01APR70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
 TOPIC TAGS--ORAL DISEASE, PATENT, DRUG, FREON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAME--3004/1080

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0131627

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--20NOV70

2/2 018

CIRC ACCESSION NO--AA0121627

ABSTRACT/EXTRACT--(U) CP-0- ABSTRACT. A PREPN. FOR TREATING DISEASES OF

ORAL CAVITY MUCOSE CONTAINED A SOLN. OF PROPOLIS IN 95PERCENT ETOH.

GLYCEROL, FREON 12, AND FREON 114 WERE ADDED. THE COMPONENTS OF THE

PREPN. WERE TAKEN IN THE FOLLOWING WT. RATIOS: SOLN. OF PROPOLIS IN

ALC. AND GLYCEROL 55-60, MIXT. OF FREON 12 WITH FREON 114 40-5PERCENT.

THE COMPONENTS IN THE SOLN. OF PROPOLIS IN ALC. AND GLYCEROL WERE TAKEN

IN THE FOLLOWING WT. RATIOS: PROPOLIS 5-7, 95PERCENT ETOH 78-82,

GLYCEROL 13-15PERCENT. THE MIXT. OF FREONS CONTAINED FREON 12 SIMILAR

TO 40 AND FREON 114 SIMILAR TO 60PERCENT. FACILITY: SPECIAL

CONSTRUCTION BUREAU OF CHEMIZATION OF THE NATIONAL ECONOMY, LATVIAN

S.S.R.

UNCLASSIFIED

USSR

UDC 539.5

TRANTSEVICH, Ya. V., POPOVA, L. S., POTAK, Ya. M., SUKHOTIN, A. M.,
GRIGOROV, G. N., ANTROPV, N. P., Moscow, Tbilisi, Leningrad

"Study of Mechanical Properties of High Strength Stainless Steel of Transition Class EP288 [Kh16Ni6, SN-2A] at Cryogenic Temperature"

Problemy Prochnosti, No 10, 1971, pp 97-100.

Abstract: The purpose of this work was to study the properties of one of the most common chrome-nickel low-carbon steels in class EP288 at cryogenic temperatures. The studies were performed using experimental melts distinguished by their low carbon and chromium contents and varying contents of austenite in the steel structure. Heat treatment of the steel included hardening in water from 1,000°C, at which level dissolution of carbides occurs, cold treatment -78°C (2 hours) and tempering at 250°C (1 hour). The data indicated that type EP288 steel with the nominal composition, as well as all experimental melts except for one, has high ductility and impact toughness, including high impact toughness of specimens with cracks at down to -253°C. The nominal steel has high strength at both room and cryogenic temperatures, the level of which increases with decreasing test temperature.

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USSR

TRANTSEVICH, Ya. V., et al., Problemy Prochnosti, No 10, 1971, pp 97-100

It is interesting to note that the strength of EP288 steel determined under such rigid test conditions as rupture of specimens with fatigue cracks at -196°C is retained or even increased in comparison to the strength of smooth specimens.

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USSR

UDC 669.14.018.258.8:669-973

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YAGAN, YE. S., POYAN, YA. M., SACHNOV, V. V., KOZLOVSKAYA, V. I.,
GRIGOROV, G. M., All-Union Scientific Research Institute of
Aviation Materials

"Stainless Steel of Increased Strength for Cryogenic Temperatures"

Moscow, Metallovedeniye, No 10, 1971, pp 18-20

Abstract: The mechanical properties of the 000Kh11N10M2T (30676) hardened steel and its welded joints were experimentally investigated at temperatures up to -253°C . Standard steel specimens and specimens with cracks showed a high ductility and low notch sensitivity. With regard to mechanical properties, the investigated steel at -253°C is not inferior to the widely used 30KhGSMA steel at 20°C . The relatively slow cooling in soldering from 900 to 700°C has little effect on the steel plasticity, due to the negligible change of solubility of carbides in this temperature interval. Welded steel joints, without and with additives, possess high plasticity and show a completely ductile fracture from tangential stresses in tests up to -253°C . 000Kh11N10M2T steel is a promising material for cryogenic technology due to its

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SR

KAGAN, YE. S., et al, Metallovedeniye, No 10, 1971, pp 18-20

high yield point ($\sim 90 \text{ kg/cm}^2$) at 20°C and its applicability up to -253°C . 2 illustrations, 1 table, 5 bibliographic references

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USSR

UDC 620.17

TAVADZE, F. N., GRIKUROV, G. N., TRANTSEVICH, YA. V., SUKHOTIN, A. M.,
ANTROPOV, N. P., and ROGATSKIY, A. L.

"Estimating the Strength of Materials and Their Welded Joints at Cryogenic
Temperatures by the Method of Testing Contour-Supported Disks for Flexure"

Kiev, Problemy Prochnosti, No 1, Jan 72, pp 109-112

Abstract: A description is given of the design of an attachment for a tensile testing machine for determining the strength of contour-supported disks by bending tests. Results are presented for the testing of basic sheet material and welded seams in the form of disks of the austenite-martensite class (steel of the SN-2A type) at temperatures of -196 and -253°C . The strength values were determined, and a comparative analysis of the obtained results with data concerning the strength of the basic metal and the welded seams was conducted. Study of the disks led to the conclusion that breakdown takes place at their point of contact with the punch in the zone of thermal influence. One table, 3 figures, 4 references.

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1/2 016 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--IONIC MECHANISMS OF AUTORHYTHMIC ACITIVITY (INVESTIGATION ON
MATHEMATICAL MODELS OF EXCITABLE MEMBRANES -U-
AUTHOR-(03)-KHODOROV, B.I., GRILIKHES, K.I., TIMIN, YE.N.

COUNTRY OF INFO--USSR

SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69,
NR 4, PP 24-29
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MATHEMATIC MODEL, FROG, CELL MEMBRANE, SODIUM, POTASSIUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/1728

STEP NO--UR/0219/70/069/004/0024/0029

CIRC ACCESSION NO--AP0106457

UNCLASSIFIED

272 016

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0106457

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INVESTIGATION WAS CARRIED ON MATHEMATICAL MODELS OF MEMBRANES OF THE GIANT AXON AND RANVIER'S NODE OF FROG. AUTORHYTHMIC ACTIVITY OCCURS ONLY IN SUCH A RANGE OF PARAMETERS OF IONIC PERMEABILITY DURING WHICH: 1) THE INWARD IONIC CURRENT AT REST STARTS TO EXCEED THE OUTWARD CURRENT TO A VALUE SUFFICIENT FOR THE DEVELOPMENT OF REGENERATIVE DEPOLARIZATION OF THE MEMBRANE AND 2) DURING THE DEVELOPMENT OF SPIKE THE OUTWARD CURRENT (POTASSIUM AND LEAKAGE) INCREASES UP TO VALUES SUFFICIENT FOR COMPLETE REPOLARIZATION (OR HYPERPOLARIZATION OF THE MEMBRANE. IN THE GIANT AXON THE FIRST CONDITION MAY BE FULFILLED BOTH BY AUGMENTING THE SODIUM CONDUCTION (G_{NA}) AND AS THE RESULT OF DECREASING THE POTASSIUM CONDUCTANCE (G_{SK}) AT THE RESTING POTENTIAL. IN RANVIER'S NODE THE INCREASE OF THE SODIUM PERMEABILITY (P_{NA}) IS OBLIGATORY. THE FREQUENCY OF THE SEQUENCE OF IMPULSES DEPENDS ON THE DEGREE OF INITIAL CHANGES OF IONIC PERMEABILITY (CONDUCTANCE) OF THE MEMBRANE AND, TO A GREATER MEASURE, ON THE TIME CONSTANT OF THE POTASSIUM PERMEABILITY, TAU_{SK}. THE LATTER IS CONDITIONED BY THE FACT THAT THE STEEPNESS OF INCREASE OF INTERSPIKE DEPOLARIZATION (PACEMAKER POTENTIAL) IS LARGELY DEPENDENT UPON THE RATE OF DECREASE OF G_{SK} (OR P_{SK}) AFTER THE END OF ACTION POTENTIAL. IN THE INSTANCE OF EXCESSIVE RISE OF G_{NA} OR VERY MARKED DECLINE OF G_{SK} THE RHYTHMIC DISCHARGE ACQUIRES A DAMPING CHARACTER, SINCE IN BOTH CASES THE PROCESS OF REPOLARIZATION OF THE MEMBRANE, NECESSARY FOR ELIMINATION OF INACTIVATION, PROVES TO BE INADEQUATE. FACILITY: A. A. VISHNEVSKY INSTITUTE OF SURGERY, MOSCOW.

UNCLASSIFIED

USSR

UDC 621.357:621.794.61+621.794.62(04)

GRILIKHES, S. YA.

Leningrad, Oksidirovaniye i Fosfatirovaniye Metallov (Oxidation and Parkerizing of Metals), Izd-vo "Mashinostroyeniye," 1971, 120 pp

Translation of Foreword: Inorganic oxide and phosphate coats are widely used in various branches of industry. Such wide application is explained by their valuable properties. Depending on the conditions of chemical and electrochemical treatment, oxide or salt films of various thickness and character can be produced on the surface of the metal. These films passivate the metal and to a certain extent increase its corrosion resistance. The protective power of films increases with increasing thickness and decreasing porosity. By changing the processing conditions, it is possible to affect not only the corrosion resistance of the material but also its mechanical and physico-chemical properties, which primarily depend on the surface condition. In this way, films can be produced with high adsorption capacity, good electro-insulating properties, and increased hardness and wear resistance. This makes it possible to use them for the improvement of

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USSR

GRILIKHES, S. YA, Oksidirovaniye i Fosfatirovaniye Metallov,
Izd-vo "Mashinostroyeniye," 1971, 120 pp

operational characteristics of articles. This booklet provides basic information on methods and technologies of oxidation and phosphating of ferrous, non-ferrous, and light metals and their alloys and the properties of the produced films. Compared with preceding editions, the booklet is supplemented by data of the production of thin passive films on metals and alloys, quality control methods of oxide and phosphate coats, and the composition of some solutions for oxidation and phosphating. Information is also given on new work carried out in the last few years on the improvement of the mentioned processes.

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GRILIKHES, S. YA., Oksidirovaniye i Fosfatirovaniye Metallov,
Izd-vo "Mashinostroyeniye," 1971, 120 pp

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GRILIKHES, S. YA., Oksidirovaniye i Fosfatirovaniye Metallov,
Izd-vo "Mashinostroyeniye," 1971, 120 pp

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USSR

GRILIKHES, S. YA., Oksidirovaniye i Fosfatirovaniye Metallov,
Izd-vo "Mashinostroyeniye," 1971, 120 pp

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USSR

UDC 699.841

KORCHINSKIY, I. L., Doctor of Technical Sciences, Professor, and GRILL, A. A.,
Candidate of Technical Sciences

"Calculation of Suspended Roofs for Seismic Effects"

Moscow, Beton i Zhelezobeton, No 6, June 1972, pp 41-44

Abstract: Vibrations of some types of suspended roofing, brought about by seismic action, are dealt with. The problem takes the length of the buildings into account; in connection with this, account is taken of the possibility of movement of the supporting contour of the roof in different phases with respect to time. This circumstance disclosed the fact that the customarily employed calculation procedure does not include in its scope the most essential forms of seismic action. It was concluded that when suspended roofs are designed for seismic effects, various positions of the seismic wave with respect to the structure and the most dangerous cases of roof loading by inertial forces must be considered. A formula, developed on the basis of experimental data, is provided for calculating the value of the dynamic coefficient. 3 figures. 3 references.

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G-RIMAK, L.
JPRS 576439
23 Jan 73

JPRS 576439
23 January 1973

EMOTIONAL STRESS DURING SPACEFLIGHT

Article by Dr. Stanislav L. Gerasimov, Doctor of Medical Sciences, and L. G. Orlov, Candidate of Medical Sciences, Moscow, Aviatsiya i Kosmonavtika, Moscow, No. 11, 1972, pp. 33-34.

A cosmonaut performs complex tasks during spaceflight. By observing the condition of the cosmonaut on the basis of pulse and respiration rates, cerebral bioelectric currents, nature of speech and special characteristics of the voice, it is possible to judge what internal efforts are being expended.

In examining emotional stress as an inevitable and powerful factor in spaceflight, it is impossible not to take into account the influence which it exerts on the physiological state and performance of a cosmonaut.

The regulating function of the emotions is as follows: under different conditions they mobilize the spiritual forces and physical capabilities of a person and it would seem, help in performing unperformable tasks. However, emotions of an opposite nature can arise in some cases when the psychological reserves of a person are inadequate as a result of low moral-psychological or professional training. These so-called asthenic emotions depress the psychic and physical possibilities of man. Man's psychological reserve is determined to a considerable degree by his individual peculiarities.

An optimum level of emotional stress corresponds to each specific type of activity. Due to different circumstances this correspondence can be impaired and then a strong emotional reaction reduces the performance level.

Cosmonauts, man's participation in space flights, is a special, for the time being still unusual form of activity. People devoting themselves to it are fully cognizant of its

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UDC 615.851.2

GRIMAK, L. P.

"Biomechanical and Autonomic Reactions in Man After Hypnotic Suggestion to Reproduce Gravitational Effects"

Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti, Vol 20, No 6, 1970, pp 1,155-1,160

Abstract: Three persons who had flown in planes and been in high-speed elevators were hypnotized and told "You are in an express elevator descending rapidly and your whole body and organs are six times lighter than usual, move about and sit as you wish." Following this suggestion of partial weightlessness, all the subjects rose on their toes, bodies compressed, arms slightly bent at the elbows, and away from the trunk. They retained this position even when walking about. All said during and after the experiment that at that moment they experienced an unusually pleasant sensation of lightness that made their movements smooth and free. These and other biomechanical characteristics were similar to those achieved by physical methods of simulating motor activity under subgravity conditions. Some autonomic reactions (tremor, accelerated pulse rate, skin galvanic

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GRIMAK, L. P., Zhurnal Vysshey Nervnoy Deyatel'nosti, Vol 20, No 6, 1970,
pp 1,155-1,160

reflex) were also identical to those occurring in real life. It would appear that man's long-term memory stores engrams of actually experienced shifts during weightlessness and associated autonomic reactions. These engrams can be activated by suitable words.

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UDC 624.04:539.3

USSR

GRIMAYLO, V. N., Candidate of Technical Sciences, Central Scientific Research Institute of Structural Parts imeni V. A. Kucherenko (Moscow)

"Features of the Elastic Interaction of Diverse Regions in Composite Two-Dimensional Structures"

Moscow, Stroitel'naya Mekhanika i Raschet Sooruzheniy, No 2, 1973, pp 35-38

Abstract: It is shown that under the conditions of a two-dimensional problem in elasticity theory, the interaction of diverse regions can assume simple forms in two cases: during the action of forces upon a composite body, which bring about at each point of its uniform model a state of pure shear, or during biaxial even compression or elongation. Since in a general case of loading the indicated states are realized in the body simultaneously, an investigation of the interaction of the diverse parts should represent the solution of a two-dimensional problem as a sum of the solutions of two problems, one of which characterizes a change of the shape, and the other -- a change of the volume of the body. A particular feature of such representation, which distinguishes it from any other, is the fact that the link between the stresses and deformations in each of the abovementioned problems is uniparametric, i.e., it depends only upon a single generalized elastic characteristic of the material. It turns out that

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GRIMAYLO, V. N., Stroitel'naya Mekhanika i Raschet Sooruzheniy, No 2, 1973,
pp 35-38

this property, when used as a basis for solving problems of elastic contact in composite bodies, considerably simplifies the solution of the problem. An example of the compression of a three-layer wedge is discussed. 2 figures. 5 references.

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GRANOVA, G. G.

Hydrometeorology

WEATHER SERVICE IN THE USSR

Article by Candidates of Geographic Sciences G. G. Granova and V. I. Kozlov, Institute of Meteorology, USSR Hydrometeorological Scientific Center, Leningrad, U.S.S.R. (Moscow, U.S.S.R.)
Izvestiya, Russian, No. 12, 1972, submitted 18 September 1972, pp. 1-5

A study was made of the basic areas of activity of the Hydrometeorological Service by which cooperation is being developed among the Hydrometeorology specialists of the USSR, the USSR republics and foreign countries.

A great and glorious path has been trod by the Hydrometeorological Service during the years of Soviet power. On 21 June 1921, V. I. Lenin signed the Decree of the Council of People's Commissars for the formation of the Hydrometeorological Service in the USSR. The service was the organizer and support base for the hydrometeorological services of all the socialist republics combined into the Soviet Union in December 1922. In the present article we shall consider the basic areas in which the cooperation of the socialist republics entering into the composition of the USSR and the Soviet republics in the field of hydrometeorology is developing.

The basic goals of the Hydrometeorological Service in all spheres of its development are determined by the ever-increasing variety of requirements of the national economy and the population of the country. The various natural and economic orientations are supplied with short range and long range weather forecasts, forecasts of the agro-meteorological conditions, the conditions of the rivers, seas and oceans, and the warnings of especially dangerous weather phenomena. The population of the country regularly receives information on the current and expected hydrometeorological conditions through the press, radio, television and autorecorders, and so on.

I should like to note that the specialists of the Hydrometeorological Service, procedural and operative instruction of our country -- the Hydrometeorological Center -- cooperate closely with the specialists of the corresponding organizations of the Hydrometeorological Service of the commonwealths, republics of the country and they, in turn, with the specialists of the weather services of the autonomous republics when fulfilling the mission of services with warnings of especially dangerous hydrometeorological phenomena.

JRS 58133
27473

UDC 669.14.018.29-414

USSR

GOL'DSHTEYN, M. I., BLYUM, E. E., GRIN', A. V., SELETKOV, A. I., LITVINENKO, D. A., LEYKIN, I. M., RUDCHENKO, A. V., OREL, E. I., VAYNTRAUB, S. S., LOKTIONOV, P. Ya., LASHCHEV, V. Ya., MOSIOSHVILI, V. V., MIROSHNICHENKO, S. I., and KONDRASHOV, M. M., Ural Scientific Research Institute of Ferrous Metals, Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin, and Kommunarsk Metallurgical Plant

"Adoption of the Industrial Production of 15G2AF Sheet Steel"

Moscow, Stal', No 9, Sep 70, pp 828-830

Abstract: An investigation of the 15G2AF plate steel (10-25 mm), commercially produced at the Kommunarsk Metallurgical Plant, revealed that alloying of the manganous structural steel with nitrogen and vanadium increases the strength and plasticity properties of the normalized rolled steel. Normalizing of the metal effects a size reduction of the grain (to 10-12), which assures a low (-100°C to -120°C) cold brittleness threshold. The strength of the 15G2AF steel was found to be at least 60 kg/mm² and the yield stress at least 45 kg/mm². Use of 15G2AF steel for welded structures decreased weight, in comparison with steel 10G2S1, by 13.6%.

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UDC 621.762.002.5(088.8)

USSR

UDACHIN, I. V., MAKAROV, V. S., TIMOSHIN, D. Ya., GAYEV, O. B., and GRIN, L. T.

"Device for Processing Powdered Materials With Liquids"

USSR Author's Certificate No. 268610, Filed 1/07/68, Published 3/08/70
(Translated from Referativnyy Zhurnal-Metallurgiya, No. 2, 1971, Abstract
No. 2 G472 P).

Translation: The device includes a container, the base of which is equipped with a drainage aperture and a perforated barrier. In order to eliminate oxidation of the powder near the bottom of the container as it is dried, an automatic valve is mounted coaxially with the drainage aperture for drainage of the liquid.

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USSR

UDC 547.789.6'781

GRIN', N. P., KRASOVSKIY, A. N., KOCHERGIN, P. M., Zaporozh'ye State Medical Institute, All-Union Scientific Research Chemico-Pharmaceutical Institute imeni S. Ordzhonididze, Moscow

"Studies in the Imidazole Series, LXXVIII. Reaction of 2-aminobenzothiazoles with α -haloketones"

Riga, Khimiya, Geterotsiklicheskikh Soyedineniy, No 9, 1972, pp 1271-1274

Abstract: A detailed study was made of the reaction of 2-aminobenzothiazole and its 6-substituted derivatives with α -bromomethyl alkyl(aryl, heteryl) ketones. Under mild conditions (in acetone at 15-20°), 3-acylmethyl-2-aminobenzothiazolines were formed. Their structure was established by qualitative reactions to the carbonyl group and infrared spectra in which there are clear absorption bands of the CO and NH groups in the 1,680-1,707 cm^{-1} and 3,320-3,345 cm^{-1} regions, respectively. The properties of the compounds were investigated, and the conditions of ring formation to obtain derivatives of imidazo[2,1-b]benzothiazole are discussed.

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Publications

USSR

KUVSHINSKIY, D. D., and GRIN', V. A.

Sluzhba Zdorov'ya (The Health Service), Moscow, "Voyennoye Izdatel'stvo Ministerstva Oborony SSSR," 1971, 240 pp

Translation: Annotation: No matter where our soldiers have served, in the harsh Polar region or the burning deserts of Central Asia, in the taiga or the mountains, the cities or in remote garrisons -- everywhere the military doctor performs his responsible and honorable work at their side. This book tells how military medical personnel accomplish the complex and important missions of strengthening the health of Soviet fighting men. The book consists of the following chapters: "Formation and Development of Soviet Military Medicine," "Military Medical Personnel in the Battles for the Homeland," "Military Medicine in the Postwar Period," and "Military Medicine in Modern War."

The simple, accessible language of the book makes it appropriate for the general reader. In it, military medical personnel, political and propaganda officers, officers, soldiers, and seamen will find a great deal of interesting material.

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USSR

KUVSHINSKIY, D. D., and GRIN', V. A., Sluzhba Zdorov'ya (The Health Service), Moscow, "Voyennoye Izdatel'stvo Ministerstva Oborony SSSR," 1971, 240 pp

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2/4

USSR

KUVSHINSKIY, D. D., and GRIN', V. A., Sluzhba Zdorov'ya (The Health Service), Moscow, "Voyennoye Izdatel'stvo Ministerstva Oborony SSSR," 1971, 240 pp

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3/4	

USSR

KUVSHINSKIY, D. D., and GRIN', V. A., Sluzhba Zdorov'ya (The Health Service), Moscow, "Voyennoye Izdatel'stvo Ministerstva Oborony SSSR," 1971, 240 pp

4.3 Improving the Military and Specialized Knowledge of Medical Personnel	216
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4/4

USSR

GRIN, V. T., IVANOV, M. YA., KRAYKO, A. N. (Moscow)

"Investigation of the Dynamics of Braking Flow of an Ideal Gas With a Closing Shock Wave"

Moscow, Mekhanika Zhidkosti i Gaza, No 4, Jul-Aug 70, pp 23-32

Abstract: The article deals with the problem of unsteady flow in an axially symmetrical channel with the centerbody in supersonic flow at the inlet and a given pressure (constant with respect to profile and variable with respect to time) in the plane of the outlet. Under steady conditions the closing shock wave is situated below the minimum profile (throat) of the channel. The calculations were carried out by a two-dimensional variant of a difference method, i.e., the equations of unsteady axially symmetrical flow were integrated. At the same time, the difference network was so selected (one cell between the channel walls) that the obtained results are closer to a unidimensional approximation. For the explanation of a series of effects detected in the calculation process (resonance, attenuation of high-
1/2

- 7 -

USSR

GRIN, V. T., et al, Mekhanika Zhidkosti i Gaza, No 4, Jul-Aug
70, pp 23-32

frequency oscillation), use was made of solutions obtained on
the basis of a linear approximation and a nonlinear approximation
of the theory of small perturbations. 9 figures, 12 biblio-
graphic entries.

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Acc. Nr: 101006

6

Abstracting Service: 3-70

Ref. Code:
UR 0482

Soviet Inventions Illustrated, Section III Mechanical and General,
Derwent,

244824 COMPENSATING COUPLING permits angular and axial displacement of shafts. It consists of halfcouplings 1 and 2. The fingers 3 and 4 with spherical heads are fixed to a shaft 5 which rotates in a sleeve 6. The finger heads fit into a groove made in the face of half coupling 1. The clipped (8,9) flexible jacket 7 prevents entry of dirt and contains grease. The shafts misalignment is compensated by the movement of fingers with the shaft 5 and displacement of spherical heads in the grooves.

6.10.67. as 1189852/25-27, GRIN, Yu. A. and BRIZINOV,
I.E. (14.10.69) Bul. 18/28.5.69. Class 47c, Int. Cl. F 16d.

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REEL/FRAME
19850557

USSR

UDC: 621.317.44

AFANAS'YEV, Yu. V., GRINBAUM, M. B., PERSIYANOV, T. V., PISHCHER, I. V.,
REKALOVA, G. I., SHAKHOV, A. A., Leningrad Electrical Engineering Institute
imeni V. I. Ul'yanov (Lenin)

"A Device for Measuring Magnetic Fields"

Moscow, Otkrytiya, Izobreneniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,
No 13, May 72, Author's Certificate No 335629, Division G, filed 10 Nov 70,
published 11 Apr 72, p 190

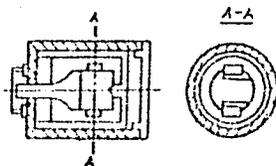
Translation: This Author's Certificate introduces a device for measuring magnetic fields. The device contains an acoustic concentrator coupled to an electromechanical transducer such as a piezoelectric converter, needle holders mounted on an acoustic neutral, and a microwire which acts as part of the measurement loop and is fastened in supports and put into oscillatory motion by the transducer. As a distinguishing feature of the patent, provision is made for measuring the induction of the magnetic field inside the cavities of magnetized articles. For this purpose the device is equipped with a second electromechanical transducer of longitudinal oscillations connected in phase with the first. The transducers are securely fastened on

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USSR

AFANS'YEV, Yu. V. et al., USSR Author's Certificate No 335629

opposite sides of the lateral surface of the concentrator, which is made in the shape of a truncated cone and is excited on the resonance frequency of torsional vibrations of the transducers.



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- 122 -

USSR

UDC: 621.317.44

AFANAS'YEV, Yu. V., GRINBAUM, M. B., PERSIYANOV, T. V., PISHCHER, I. V.,
REKALOVA, G. I., SHARHOV, A. A., Leningrad Electrical Engineering Insti-
tute imeni V. I. Ul'yanov (Lenin)

"A Device for Measuring Magnetic Fields"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratzsy, Tovarnyye Znaki,
No 13, May 72, Author's Certificate No 335628, Division G, filed 10 Nov 70,
published 11 Apr 72, pp 189-190

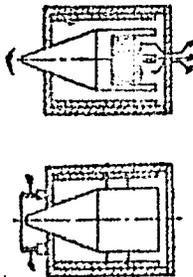
Translation: This Author's Certificate introduces a device for measuring
magnetic fields. The device contains an acoustic concentrator coupled to
a hollow conducting half-wave cup holding an electromechanical converter
such as a piezoelectric converter, needle holders mounted on an acoustic
neutral, and a microwire which acts as part of the measurement loop. The
microwire is fastened in supports and is put into oscillatory motion by
the concentrator mentioned above. As a distinguishing feature of the
patent, in order to measure the normal component of the field on the sur-
face of magnetized bodies, the device is equipped with a second electro-
mechanical converter connected in antiphase with the first. The converters

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USSR

AFANAS'YEV, Yu. V. et al., USSR Author's Certificate No 335628

are securely fastened to the concentrator base which is made in the form of a wedge. The converters are arranged symmetrically with the geometric axis of the wedge, which is excited on the resonance frequency of flexural vibrations of the converters.



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- 101 -

USSR

UDC 616.988.75-036.22-078"1969"

SMORODINTSEV, A. A., LUZYANINA, T. Ya., IVANOVA, N. A., and GRINBAUM, Ye. B.,
All Union Scientific Research Institute of Influenza, Ministry of Health USSR

"Characteristics of Influenza A2 Virus Strains Isolated During the 1969 Epidemic in Leningrad"

Moscow, Voprosy Virusologii, No 5, Sep/Oct 70, pp 601-605

Abstract: The influenza epidemic in the winter of 1969 in Leningrad resulted from the spread of a new antigenic variant of the Hong Kong A2 virus. The distinctive feature of the Hong Kong A2 strains is their capacity to multiply intensively in the allantoic and amniotic cavities of chick embryos. On the basis of this characteristic, an unusually high isolation rate of epidemic strains from patients was obtained. The A2-69 viruses differ in this respect from the A2 viruses circulating previously, the isolation of which has presented increasing difficulties since 1962. Another typical feature of the newly isolated strains is their pronounced antigenic difference from the earlier A2-1 and A2-2 variants. This sharp deviation in the antigenic structure of Hong Kong A2 influenza virus was confirmed by the absence of antibodies for the new variant in the Leningrad population under 60 years of age.

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USSR

SMORODINTSEV, A. A., et al, Voprosy Virusologii, No 5, Sep/Oct 70, pp 601-605

This factor led to the rapid involvement of both children and adults in the epidemic process.

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- 48 -

USSR

UDC 541.49:546.791:546.9

GRINBERG, A. A. (Deceased), PETRZHAK, G. I., and LOZHKINA, G. S.

"Tetravalent Uranium Compounds With Complex Platinum Cations"

Leningrad, Radiokhimiya, Vol 15, No 6, 1973, pp 879-880

Abstract: New complex uranium(IV) salts were synthesized: $[\text{Pt}(\text{NH}_3)_4]_2[\text{U}(\text{C}_4\text{H}_4\text{O}_6)_2(\text{C}_2\text{O}_4)_2]$ -- ditartratodioxalatouraneate of tetramineplatinum(II) -- and $[\text{Pt}(\text{NH}_3)_6][\text{U}(\text{C}_2\text{O}_4)_4] \cdot 3\text{H}_2\text{O}$ -- tetraoxalatouraneate of hexamineplatinum(IV). It was shown that the derivative of uranoxalic acid with tetracharged platinum(IV) cation is the least soluble one in water among uranoxalic acid salts with mono-, tri-, and tetracharged complex cations.

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USSR

UDC 541.49:546.841

GRINBERG, A. A., (DECEASED), PETRZHAK, G. I., and LOZHKINA, G. S.,

"Complex Compounds of Thorium with Organic Ligands"

Leningrad, Radiokhimiya, Vol 13, No 6, 1971, pp 836-840

Abstract: To obtain mixed oxalate-citrate derivatives of thorium, crystalline thorium oxalate was dissolved in 0.1 M solution of potassium citrate, the solution was cooled and alcohol was added with stirring, precipitating the product: potassium dicitratooxalatothoreate $K_4 \left[\text{Th}(\text{C}_4\text{H}_4\text{O}_6)_2 \cdot (\text{C}_2\text{O}_4)_2 \right] \cdot 3 \text{H}_2\text{O}$, decomposition point 279°C . Potassium ditartratodioxalatothoreate $K_4 \left[\text{Th}(\text{C}_4\text{H}_4\text{O}_6)_2 \cdot (\text{C}_2\text{H}_4\text{O}_7)_2 \right] \cdot 3\text{H}_2\text{O}$, decomposition point 243°C was obtained analogously.

Both compounds had structures similar to the $\text{U}^{(\text{VI})}$ complexes. They are fine white crystalline products, stable in air, soluble in water and dilute nitric, hydrochloric, and sulfuric acids. Infrared spectra of both compounds are quite similar, indicating similarity in their structures. An assumption is made that thorium and uranium form the citrate complexes by H^+ exchange of the hydroxyl and two carboxyl groups; in the oxalate-tartrate complex the addition of the tartrate ion occurs obviously by hydrogen exchange of the hydroxyl and carboxyl groups.

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USSR

UDC 541.49:546.791:546.841

GRINBERG, A. A., (DECEASED), PETRZHAK, G. I., and LOZHKINA, G. S.

"Tetravalent Uranium and Thorium Benzoylacetates"

Leningrad, Radiokhimiya, Vol 13, No 6, 1971, pp 904-906

Abstract: The IR spectra of benzoylacetates of thorium and uranium are identical, indicating similarities in the structures of these compounds. The decomposition points were determined to be 190° for uranium benzoylacetate and 209° for the thorium complex. The solubility in alcohol at 20°C was studied in a search for isomers of these compounds. However, it was not possible to isolate any isomeric forms of these complexes, probably because of rapid rearrangement inside the internal sphere.

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USSR

UDC [537.226+537.311.33]:[537+535]

GRINBERG, A. A.

"Optical Phenomena in Semiconductors"

V sb. Materialy 6-y Zimney shkoly po teorii yadra i fiz. vysok. energii, 1971.
Ch. 3 (Materials of the 6th Winter School on Nuclear Theory and High Energy
Physics, 1971. Part 3 -- Collection of Works), Leningrad, 1971, pp 29-54
(from RZh Fizika, No 12, Dec 71, Abstract No 12Ye1415)

Translation: The application of perturbation theory and its graphical representation is illustrated in processes described by a second order of this theory. Processes caused by the interaction of electrons and holes with photons and phonons are discussed: I. Indirect optical transitions caused by interaction with phonons; II. Interzone absorption of light under indirect transitions with the participation of electrons; III. Two-photon absorption of light; IV. Incoherent scattering of light in an ideal crystal in the fundamental absorption band.

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-- 44 --

JPRS 55569
29 Mar 72
GRINBERG, A. A.

ABSTRACTS OF ARTICLES PUBLISHED IN THIS ISSUE

[Abstracts; Moscow, Vestnik Akademii Meditsinskikh Nauk SSSR, Russian, No 2, 1972, p 96]

"Medicobiological Investigations Dealing with the Use of Estrogens as Growth Stimulating Agents," by A.A. Pokrovskiy, N.F. Nesterin, G.P. Davilina, Ye.Ye. Ryazantseva, L.Ya. Solov'yeva, p. 3.

As a result of medicobiological examination of meat products obtained from bull calves stimulated with diethylstilbestrol, it was shown that the recommended method of using this hormone does not rule out the possibility of retention in subproducts of meat of residual quantities of this agent. When feeding laboratory animals on experimental meat there was manifestation of some adverse effects on their development and change in sex gland function. On the basis of the data obtained and the literature, with due consideration of worldwide experience in using diethylstilbestrol to fatten various species of animals, the authors conclude that it is impossible to use this preparation in animal breeding.

There are eight tables, one illustration; bibliography lists 118 items.

"Experience with Vitamin E Supplement for Bicycle Racers and Skiers," by Ye.A. Sakayeva, V.V. Yefremov, p. 52.

A study was made of the effect of different intensities of physical stress on vitamin E availability in the organism of cyclists and skiers during winter sport rests. As a result of the study it was found that 1.5-2 and especially 3-4-hour training induces a considerable decline in vitamin E content in the blood serum of the athletes. Additional intake of this vitamin in doses of 50-150 mg for cyclists who trained for 1.5-2 hours and 200-300 mg for skiers who trained for 3-4 hours raises the blood serum vitamin E level and results in greater efficiency of the athletes.

Two illustrations; bibliography lists nine items.

"A True Antrectomy Technique in Surgery for Peptic Ulcers," by Yu.M. Pantyagin, A.A. Grinberg, T.I. Laktionova, p. 72.

A method is described for pinpointing the boundaries of the antral portion of the stomach during surgical interventions using 2% solution of Congo red dye as an indicator on the gastric mucosa. The method has been developed experimentally and used in clinical practice on 30 patients with duodenal and gastric ulcers; this revealed that it is simple, safe, and permits performance of a true antrectomy, in other words, it permits the performance of a functionally substantiated sparing operation on the stomach. The precision of the method was confirmed by histological examinations.

Two illustrations; one table; bibliography lists 24 items.

GRINBERG, A. A.

A TRUE ANATOMICAL TECHNIQUE IN SURGICAL FOR PEPTIC ULCERS:

Article by Yu.N. Grinberg, A.A. Grinberg, T.I. Lukitskaya, Second Moscow Medical Institute, Dept. 11, Pirogov Moscow, Vostok Akademi Meditsinskikh Nauk SSSR, Russian, No 2, 1972, pp 72-77

UIC: 614,34616,342-002,46-059; 616,14059,071

5-PRS 55569
29 May 72

Ischem pertaining to surgical management of peptic ulcers continue to have vital importance; indications are being defined, the most sophisticated surgical techniques are being discovered, and new technical procedures are being tested.

Interpretation of the data pertaining to clinical pathophysiology of the stomach led to the conception of the dissimilar functional role of its different anatomical parts. With regard to the significance of the antral portion of the stomach in pathophysiology of ulcers it is reported in stress the following: 1) the experimental work of physiologists proved that the antrum should be considered first of all as a unique organ that is quite distinct in its morphological and functional characteristics from the other portions of the stomach and plays a major part in regulating gastric secretion (B.P. Babkin; I.I. Kurshin; Iurevich; Prokhorov; Thompson and Franklin); 2) in the case of duodenal ulcers, antrectomy combined with vagotomy (of the trunk or selective) has presently received both theoretical and clinical substantiation; the experience of Soviet surgeons (E.I. Bekman; Ya.Ye. Borozov et al.; V.S. Fayat et al.; V.S. Sokol'ev et al., and others) in operations that after such surgery peptic ulcers are extremely rare, with preservation of a large gastric reservoir constitutes, to some extent, a prophylactic measure against the nervous postgastrosection disturbance; 3) stomach ulcers can with sufficient justification be called peptic ulcers, as indicated by the comprehensive works of Of et al., Kuding et al., and Schragel et al. Consequently, here too, there is no need for extensive gastric resection.

The effort is warranted with regard to substantiation of a technique for resection of the antral portion of the stomach within its true boundaries. It must be stressed, that the procedures that have become popular in clinical practice do not permit accurate enough resolution of this problem. It is not by chance that different surgeons imply resection of one-fourth to one-half the stomach when they use the term, "antrectomy." Only anatomical guide-

Acc. Nr.

AP0034218

Abstracting Service:
CHEMICAL ABST. 4-70

Ref. Code

WR0078

G

74268b Reaction of uranium compounds with Rongalite.
Grinberg, A. A. / Marshak, E. M. (USSR). *Zh. Neorg. Khim.*
1970, 15(1), 152-4 (Russ). UO_2^{2+} oxidizes rongalite (I) (contg.
93.4% $NaHSO_2 \cdot CH_2O \cdot 2H_2O$) to HSO_3^- . Excess of I reacts with
micro quantities of reduced UCl_4 to give sulfate. U(IV) was
dett. in the presence of H_2SO_4 by titrn. with MnO_4^- in AcOH
contg. some HCHO. HMJR

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Acc. Nr:

AP0043778

Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy
Fiziki, 1970, Vol 58, Nr 3, pp 989-995

THEORY OF THE PHOTOELECTRIC
AND PHOTOMAGNETIC EFFECTS PRODUCED BY LIGHT PRESSURE

~~A. A. Gribanov~~

A theory of current carrier drag due to electromagnetic wave pulses is developed. Formulas for the photo e.m.f. when $\omega\tau \gg 1$ are derived for the case when light absorption by free current carriers is possible only if acoustic phonons participate. The formulas are applicable in the quantum limit $\hbar\omega \gg T$. The case when optical transitions occur between two sub-bands is also considered. The photo e.m.f. arising in a transverse magnetic field, which is a manifestation of the monopolar photomagnetic effect, is investigated.

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UDC 542.943

GRINBERG, A. A., (Deceased), MARSHAK, YE. M.

"Reaction of Uranium Compounds with Rongalite"

Moscow, Zhurnal Neorganicheskoy Khimii, Vol 15, No 1, 1970, pp 152-154

Abstract: Rongalite (formaldehyde sodium sulfoxylate) has been proposed as an agent suitable for converting uranyl salts to quadrivalent uranium. A study was made of the changes Rongalite undergoes in this process. A method based on permanganometric titration of uranium in acetic acid containing formalin solution was developed and used by the authors to determine uranium (IV) in end solutions in the presence of H_2SO_3 . It was established that in the reaction of hexavalent uranium with Rongalite, the latter is oxidized to the sulfite. Excess Rongalite in reaction with trace amounts of already reduced uranium undergoes partial oxidation to sulfate. A method is proposed for determining U(IV) and sulfurous acid when present together.

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1/2 008 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--BEHAVIOR OF ISOMERIC DIAMMINES OF PLATINUM (II) IN THE PRESENCE OF
ACTIVATED CARBON -U-
AUTHOR--GRINBERG, A.A., GELFMAN, M.I., PECHENYUK, S.I.
COUNTRY OF INFO--USSR
SOURCE--ZH. NEORG. KHIM. 1970, 15(2), 487-9
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--PLATINUM, ACTIVATED CARBON, ISOMER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY PEEL/FRAE--1987/0307 STEP NO--UP/0078/70/015/002/0487/0489
CIRC ACCESSION NO--AP0103962
UNCLASSIFIED

PROCESSING DATE--11SEP70

UNCLASSIFIED

2/2 008
CIRC ACCESSION NO--AP0103962

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ON A CONTACT WITH ACTIVATED C
(PREPD. FROM SACCHAROSE), CIS (PT(NH SUB3) SUB2 CL SUB2) ISOMERIZED IN
AQ. SOLN. TO TRANS (PT(NH SUB3) SUB2 CL SUB2).

0123

UNCLASSIFIED

1/3 024 UNCLASSIFIED
TITLE--VAGOTOMY IN SURGERY OF PEPTIC ULCER -U-

PROCESSING DATE--27NOV70

AUTHOR--(03)--MAYAT, V.S., PANTSYREV, YU.M., GRINBERG, A.A.

COUNTRY OF INFO--USSR

SOURCE--KHIRURGIYA, 1970, NR 6, PP 28-34

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SURGERY, STOMACH, DIGESTIVE SYSTEM DISEASE, SECRETION,
INSULIN, HEMORRHAGE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3008/0052

STEP NO--UR/0531/70/000/006/0028/0034

CIRC ACCESSION NO--AP0137243

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--27NOV70

2/3 024

CIRC ACCESSION NO--AP0137243

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. ON THE BASIS OF LITERATURE DATA AND PERSONAL OBSERVATIONS THE AUTHORS PRESENT A PATHOPHYSIOLOGICAL SUBSTANTIATION OF DIFFERENT METHODS IN THE SURGICAL TREATMENT OF PEPTIC ULCER. THE NECESSITY OF DIFFERENTIATED APPROACH IN SOLVING THE PROBLEM AND COURSE OF ULCER, FEATURES SPECIFIC TO THE SECRETORY AND MOTOR FUNCTION OF THE STOMACH, IS EMPHASIZED. OUT OF 345 OPERATIONS IN PEPTIC ULCER 150 WERE PERFORMED IN COMBINATION WITH VAGOTOMY. IN OVER 80 PER CENT OF PATIENTS THERE WERE ABSOLUTE OPERATIVE INDICATIONS. ECONOMIC RESECTION OF THE STOMACH IN COMBINATION WITH VAGOTOMY IS THE OPERATION OF CHOICE IN CHRONIC DUODENAL ULCER. PYLOROPLASTY WAS CARRIED OUT ONLY IN PATIENTS WITH A MARKED PREVALENCE OF SECRETION AFTER INSULIN STIMULATION. IN STENOSIS OF THE PYLORUS THE OPERATIVE TECHNIQUE IS MAINLY DETERMINED BY THE DEGREE OF STENOSIS AND STATE OF THE GASTRIC MOTOR ACTIVITY. A RARE INHIBITION OF THE LATER SHOULD SERVE AS A CONTRAINDICATION TO VAGOTOMY. SPARING OPERATIONS ARE PARTICULARLY EXPEDIENT IN EMERGENCY SURGERY IN PERFORATING ULCERS AND PROFUSE ULCEROUS HEMMORRHAGES. THE IMMEDIATE RESULTS OF 150 OPERATIONS WITH VAGOTOMY ARE SATISFACTORY. OUT OF 80 PLANNED OPERATIONS THERE WAS ONE LETHAL ISSUE. THE GREATEST LETHALITY WAS OBSERVED IN THE GROUP OF PATIENTS OPERATED FOR PROFUSE HEMORRHAGE. RELAPSES OF PEPTIC ULCER WERE NOT OBSERVED. THERE WERE SEEN NO MARKED POSTGASTRECTOMY DISORDERS. AT REMOTE POSTOPERATIVE PERIODS A MODERATE DIARRHEA WAS REVEALED IN 2 OUT OF 65 CLINICALLY EXAMINED PATIENTS.

UNCLASSIFIED

3/3 024

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137243

ABSTRACT/EXTRACT--FACILITY: KAFEDRA GOSPITAL'NOY KHIPURGTI. IIMII IMENI

N. I. PIROGOVA.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--VAGOTOMY AND PYLOROPLASTY IN SURGERY OF DUODENAL ULCERS -U-
AUTHOR-(04)-PANTSYREV, U.M., GRINBERG, A.A., MINTS, V.YA., AGEYCHEV, V.A.
COUNTRY OF INFO--USSR
SOURCE--VESTNIK KHIRURGII IMENI I. I. GREKOVA, 1970, VOL 104, NR 4, PP
74-79
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--DUODENUM, SURGERY, CRANIAL NERVE, LESION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/0038

STEP NO--UR/0589/70/104/004/0074/0079

CIRC ACCESSION NO--AP0105137

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0105137

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE HEINEKE-MIKULICZ PYLOROPLASTY ASSOCIATED WITH BILATERAL TRUNK OR SELECTIVE VAGOTOMY WAS ACCOMPLISHED IN 62 PATIENTS WITH DUODENAL ULCERS. FORTY EIGHT PATIENTS WERE OPERATED UPON ON URGENT INDICATIONS FOR PERFORATION OR PROFUSE HEMORRHAGE FROM DUODENAL ULCERS. LIGATION OF THE BLEEDING VESSEL WITH PYLOROPLASTY AND VAGOTOMY IS BELIEVED TO BE ADVANTAGEOUS IS SURGERY OF PROFUSE HEMORRHAGES, WHEN THE ROUTINE GASTRECTOMY YIELDS STILL GREAT PER CENT OF THE POSTOPERATIVE MORTALITY. DISSECTION OF A PERFORATING DUODENAL ULCER, PERFORMED IN 38 PATIENTS, IS CONSIDERED TO BE MORE RADICAL THAN SIMPLE SUTURING OF THE ULCER. THE FORMER IS MORE FEASIBLE TECHNICALLY THAN GASTRECTOMY. IN VAST MAJORITY OF PATIENTS PYLOROPLASTY AND VAGOTOMY RESULTED IN RELIABLE INHIBITION OF THE GASTRIC SECRETION. AMONG 62 PATIENTS THERE WERE TWO DEATHS DUE TO CAUSES NOT RELATIVE TO SURGICAL INTERVENTION. IN THE REMAINDER GOOD IMMEDIATE RESULTS WERE OBTAINED. TWENTY SIX PATIENTS WERE INVESTIGATED CLINICALLY WITHIN THE TERMS FROM 3 MONTHS TO 1.5 YEARS, NO ULCER RECURRENCE WAS NOTED. SLIGHT DIARRHEA WAS OBSERVED IN 2 CASES. NO MARKED DUMPING SYNDROME PHENOMENA WERE OBSERVED.

UNCLASSIFIED

1/2 026 UNCLASSIFIED PROCESSING DATE--0900170
TITLE--ON DIFFERENTIAL DIAGNOSIS OF THE PAGET, SCHROETTER DISEASE -U-

AUTHOR--(03)--DUMPE, E.P., GRINBERG, A.A., PRIKUPETS, V.L.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK KHIRURGII IMENI I. I. GREKOVA, 1970, VOL 104, NR 5, PP
46-51

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--THROMBOSIS, VEIN, DIAGNOSTIC METHODS, TUMOR, CANCER,
METASTASIS, RHEUMATIC DISEASE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1990/1017

STEP NO--UR/0589/70/104/005/0046/0051

CIRC ACCESSION NO--AP0109168

UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0109168

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INCIDENCES OF ACUTE THROMBOSES OF SUBCLAVICULAR AND AXILLARY VEINS RANGED FROM 10 TO 14 PER CENT TO A TOTAL NUMBER OF PATIENTS WITH THROMBOSIS OF CAVAL VEINS AND THEIR DUCTS.

THE CAUSE OF OCCLUSION OF THE UPPER EXTREMITIES VEINS IS VARIED. THE CLINIC OF ACUTE THROMBOSIS OF SUBCLAVICULAR AND AXILLARY VEINS IS OBSERVED IN THE PAGET SCHROETTER DISEASE, AFFECTIONS RESULTING IN OUTSIDE COMPRESSION OF THE SUBCLAVICULAR AND AXILLARY VEINS; DISEASES NOT RELATED WITH IMPAIRMENT OF THE VENOUS BLOOD OUTFLOW FROM THE UPPER EXTREMITY. THE DIAGNOSIS OF THE PAGET SCHROETTER DISEASE IS BASED ON A CHARACTERISTIC CLINICAL PICTURE AND DATA OF ACCESSORY METHODS OF INVESTIGATION, AMONG WHICH PHLEBOGRAPHY AND PHLEBOTOMETRY ARE OF SPECIAL IMPORTANCE. IN DIFFERENTIAL DIAGNOSIS IT IS NECESSARY TO EXCLUDE MALIGNANT TUMORS AND METASTASES COMPRESSING VEINS, INFLAMMATORY INFILTRATIONS IN THE SUBCLAVICULAR AND AXILLARY REGIONS, HEMATOMAS, SCARRING PROCESSES, THE PECULIAR FORMS OF NONSPECIFIC POLYARTHRITIS.

FACILITY: FAKUL'TETSKOY KHIRURGICHESKOY KLINIKI IM. S. I. SPASOKUKUTSKOGO AND HOSPITAL'NOY KHIRURGICHESKOY KLINIKI 2-GO MOSKOVSKOGO ORDENA LENINA MEDITSINSKOGO INSTITUTA IM. N. I. PIROGOVA.

UNCLASSIFIED

1/2 026 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--ON DIFFERENTIAL DIAGNOSIS OF THE PAGET, SCHROETTER DISEASE -U-
AUTHOR--(03)-DUMPE, E.P., GRINBERG, A.A., PRIKUPETS, V.L.
COUNTRY OF INFO--USSR
SOURCE--VESTNIK KHIRURGII IMENI I. I. GREKOVA, 1970, VOL 104, NR 5, PP
46-51
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--THROMBOSIS, VEIN, DIAGNOSTIC METHODS, TUMOR, CANCER,
METASTASIS, RHEUMATIC DISEASE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/1017

STEP NO--UR/0589/70/104/005/0046/0051

CIRC ACCESSION NO--AP0109168

UNCLASSIFIED

2/2 026

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PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0109168

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INCIDENCES OF ACUTE THROMBOSES OF SUBCLAVICULAR AND AXILLARY VEINS RANGED FROM 10 TO 14 PER CENT TO A TOTAL NUMBER OF PATIENTS WITH THROMBOSIS OF CAVAL VEINS AND THEIR DUCTS.

THE CAUSE OF OCCLUSION OF THE UPPER EXTREMITIES VEINS IS VARIED. THE CLINIC OF ACUTE THROMBOSIS OF SUBCLAVICULAR AND AXILLARY VEINS IS OBSERVED IN THE PAGET SCHROETTER DISEASE, AFFECTIONS RESULTING IN OUTSIDE COMPRESSION OF THE SUBCLAVICULAR AND AXILLARY VEINS; DISEASES NOT RELATED WITH IMPAIRMENT OF THE VENOUS BLOOD OUTFLOW FROM THE UPPER EXTREMITY. THE DIAGNOSIS OF THE PAGET SCHROETTER DISEASE IS BASED ON A CHARACTERISTIC CLINICAL PICTURE AND DATA OF ACCESSORY METHODS OF INVESTIGATION, AMONG WHICH PHLEBOGRAPHY AND PHLEBOTOMETRY ARE OF SPECIAL IMPORTANCE. IN DIFFERENTIAL DIAGNOSIS IT IS NECESSARY TO EXCLUDE MALIGNANT TUMORS AND METASTASES COMPRESSING VEINS, INFLAMMATORY INFILTRATIONS IN THE SUBCLAVICULAR AND AXILLARY REGIONS, HEMATOMAS, SCARRING PROCESSES, THE PECULIAR FORMS OF NONSPECIFIC POLYARTHRITIS.

FACILITY: FAKUL'TETSKOY KHIRURGICHESKOY KLINIKI IM. S. I. SPASOKUKOTSKOGO AND HOSPITAL'NOY KHIRURGICHESKOY KLINIKI 2-GO MOSKOVSKOGO URDENA LENINA MEDITSINSKOGO INSTITUTA IM. N. I. PIROGOVA.

UNCLASSIFIED

USSR

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GRINBERG, A. A., Physicotechnical Institute imeni A. F. Ioffe, Academy of Sciences ~~USSR~~

"Theory of Photoelectric and Photomagnetic Effects Produced by Light Pressure"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol. 58, No. 3, Mar 70, pp 989-995

Abstract: A theory of current carrier drag caused by electromagnetic wave pulses is developed. It is noted that although a phenomenological theory of photo emf caused by light pressure was developed by Barlow, Gurevich, and Rumyantsev, the theory is limited by the condition $\hbar\omega > T$, where T is the lattice temperature and $\hbar\omega$ is the photon energy. In this approximation the photo emf is interpreted as a Hall effect caused by the electric and magnetic fields of the light wave. The limitation $\hbar\omega < T$ is associated with the absorption of a photon and not with the formation of a constant current or electric field. This paper considers the quantum situation which is considerable in the optical range. Formulas which are applicable in the quantum limit $\hbar\omega > T$ are derived for the photo emf for $\omega\tau > 1$, for the case when light absorption by free current carriers is possible only with the participation of acoustic phonons. Also considered is the case in which optical transitions occur between two subzones. The photo emf arising in a transverse magnetic field and representing monopole photomagnetic effect is also investigated.

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USSR

UDC 541.123.59:543.544;6:661.833.

1-2

GRINBERG, A. N., and VINAROV, I. V.

"Equilibrium of the Ion Exchange Sorption of Zirconium and Hafnium From Nitric Acid Solutions on the Cation Exchange Resin KU-2"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 46, No 5, May 72, pp 1185-1187

Abstract: The equilibrium of the ion exchange sorption of zirconium and hafnium from nitric acid solution on the hydrogen form of KU-2 cation exchange resin has been investigated. It has been shown that the results obtained fit the Nikol'ski equation. Exchange constants for zirconium ($n_2 = 1$) and hafnium ($n_2 = 2$) were found to be 3.77×10^{-3} and 3.44×10^{-3} respectively, n_2 being the charge of the ion.

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Ion Exchange

USSR

UDC 669.296:543.546.6

GRINBERG, A. N., VINAROV, I. V., KUSHNIRSKAYA, YE. I.

"Kinetics of Desorption of Hafnium and Zirconium from the KU-2 Cation-Exchange Resin by Sulfuric Acid"

Moscow, Zhurnal Fizicheskoy Khimii, Vol XLVI, No 1, 1972, pp 34-37

Abstract: A study was previously made of the desorption kinetics of hafnium [I. V. Vinarov, et al., Zh. fiz. khimii, No 41, 2894, 1969] in which it was established that during the initial period the process takes place in the intradiffusion region. A study of the desorption kinetics of zirconium by a 1 normal solution of sulfuric acid as a function of a number of external parameters and the application of the "discontinuity" method has now demonstrated that during the initial period, this process also takes place in the intradiffusion region but then shifts to the mixed region. The internal diffusion coefficients were determined by the Patterson and Boyd equations. The temperature coefficients and activation energies of desorption of zirconium were calculated. The possible effect of chemical kinetics is noted. Graphs are presented showing the variation of the desorption rate of zirconium with a discontinuity 10 minutes after the beginning of the experiment, the desorption rate of zirconium with a discontinuity 30 minutes after beginning the experiment, U as a function of $\tau^{1/2}$ for different grain sizes of the ion-exchange
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USSR

GRINBERG, A. N., et al., Zhurnal Fizicheskoy Khimii, Vol XLVI, No 1, 1972, pp 34-37

resin and U as a function of $\tau^{1/2}$ at various temperatures [$U = c/c_{\text{equil}}$]. The experimental data on the effect of the grain size of the ion-exchange resin and the temperature show that with an increase in temperature the equilibrium is reached faster. In practice, the grain size of the ion-exchange resin has no effect on the time of reaching equilibrium. The apparent activation energy calculated by the Arrhenius equation for ion-exchange resin fractions with $r_{\text{ave}} = 0.027$ and 0.015 cm are 2.93 and 2.07 kcal/mole, respectively. These small activation energies are characteristic of diffusion processes.

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USSR

UDC 681.3.007

ABEZGAUZ, M. I., GOLANT, Yu. A., TERESHKO, E. P., Engineers, and GRINBERG, A. S., Candidate of Technical Sciences

"Method of Representing Information in Automated Control Systems of Discrete Production"

Moscow, Pribory i Sistemy Upravleniya, No 7, July 1971, pp 10-12

Abstract: The article examines the organization of the structure of document arrays in automated control systems which is based on a single concept of the production situation -- a conceptual model. The suggested version for representing information is based on the following principles: utilization of a specific model of object operation, application of the "information resources" concept along with the "material resources" concept, interpretation of the process of operational selection of the controlling actions, selection of groups of interacting events, examination of data utilization by the personnel, selection of the staff, compilation of a set of algorithms, placement of code diagrams in documents and standardization of operational documents for all administrative workers with an individual composition of code diagrams. The composition of the code diagrams depends on the set of
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ABEZGAUZ, M. I., et al., Pribory i Sistemy Upravleniya, No 7, July 1971, pp 10-12

interrelated events of the sphere of the individual administrative worker and the number of elementary controlled events reflected by the specific set of documents. The workers are periodically supplied with the standard document forms, including a specification-key with a complete set and structure of code diagrams and other information. The advantages of this method include the possibility of organizing information required by the particular worker and control of information resources, establishing prerequisites for the formulation of a single conceptual model, accelerating the process of rapidly selecting the necessary data from a set of documents, and the possibility of a formal description and quantitative evaluation of the perception of data by the personnel.

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1/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--KINETICS OF THE REACTION OF N BUTYL N PRIME, N PRIME,
DIBUTYLTHIOUREA WITH OZONE -U-
AUTHOR--(04)-LIPKIN, A.M., RAZUMOVSKIY, S.D., GRINBERG, A.YE., GURVICH,
YA.A.
COUNTRY OF INFO--USSR
SOURCE--DUKL. AKAD. NAUK SSSR 1970, 192(1), 127-30
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CHEMICAL REACTION KINETICS, OZONE, CONDENSATION REACTION,
THIOUREA
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3004/1878 STEP NO--UR/0020/70/192/001/0127/0130
CIRC ACCESSION NO--AF0132140
UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AT0132140
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. KINETIC DATA WERE PRESENTED FOR
THE REACTION OF O SUB3 WITH TRIBUTYLTHIOUREA (I). THIS (BROWN OIL), N
PRIME20 SUBD 1.5147, D PRIME20 0.965, WAS PREPD. BY CONDENSATION OF BUNH
SUB2 AND BU SUB2 NH WITH CS SUB2 IN H SUB2 O IN THE COLD, FOLLOWED BY
ELIMINATION OF H SUB2 S BY HEATING; BY HEATING NA BUTYLDITHIOCARBAMATE
WITH BU SUB2 NH.HCL; OR BY REACTION BY BUNCO WITH BU SUB2 NH. THE TITLE
REACTION WAS FOLLOWED SPECTROSCOPICALLY. THE RESULTS, SHOWN
GRAPHICALLY, SUGGEST THAT THE PROTECTIVE ACTION OF I AS AN ANTIOXIDANT
APPEAR STRONGER IN THE EARLY STAGES OF THE REACTION, DURING WHICH A
VOLATILE PRODUCT IS FORMED, ALONG WITH TRIBUTYLUREA. EVIDENTLY THE
REACTION SEQUENCE IS: I PLUS O SUB3 YIELDS BUNHCONBU SUB2 PLUS SO SUB2;
FOLLOWED BY REACTION OF THIS WITH O TO FORM BUNCO AND OTHER
(UNIDENTIFIED) PRODUCTS. THE 1ST STEP HAS A HIGH REACTION RATE, WHICH
COULD NOT BE MEASURED DIRECTLY. FACILITY: INST. KHIM. FIZ.,
MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 669.15-194:669.295:621.785.6:
:539.389.3:620.183.6

GRINBERG, B. G., PASHKOV, P. P., PINCHUK, P. A., KNYSHEV, Yu. V.,
and SHTEYN, L. M., All-Union Correspondence Construction Engineer-
ing Institute

"X-Ray Microanalysis of the Diffusion Layer in Titanium-Steel
Bimetal"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallur-
giya, No 7, 1973, pp 133-135

Abstract: Investigation results are presented of diffusion proces-
ses in the bimetal VT1-1 titanium + EI702(N36TYu) alloy. The bime-
tal was produced by means of joint rolling of EI702 alloy, heated
in argon, with cold VT1-1 titanium. The thickness of the bimetal
was 0.12-1.2 mm, that of the covering was 10% of this. Parts
from the bimetal were hardened from 950-1000°C and subjected to
hardening temper (aging) at 650-700°C for 2-6 hrs. The redis-
tribution of iron, nickel, and chromium from EI702 alloy into
VT1-1 titanium was determined. By comparison of the microhardness,

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